State of Rhode Island
Department of Environmental Management

Office of Air Resources

Rhode Island Motor Vehicle Inspection/Maintenance Program

Annual Report - Year 2012
"Data Analysis and Reporting"

submitted
to the

U.S. Environmental Protection Agency (EPA)

July 2013

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Appendices

1. Executive Summary

The Rhode Island Motor Vehicle Inspection/Maintenance (I/M) Program was implemented in January of 2000. An annual report to the EPA is required under 40 CFR Part 51 § 51.366 "Data Analysis and Reporting". This report has been developed to comply with that requirement for the period from January 1, 2012 to December 31, 2012.

The report includes details of the I/M Program activities, including inspection data; description of the enforcement methods employed; outline of quality control and quality assurance program mechanisms used, along with a description of significant events.

The Rhode Island I/M program requires a biennial inspection of subject vehicles in a test-and-repair system. The number of Authorized Inspection Repair Stations (AIRS) has remained steady during the duration of the program, ranging from 287-294 stations. At the end of December, 2012, 291 stations were active in the network, throughout the state, including those at the Division of Motor Vehicles (DMV) and the facility run by Systech International (Systech), the Program Manager. Vehicles are tested using one of four methods: on-board diagnostic (OBD) testing including OBD diesel, a transient test (NYTEST with BAR31 trace) or a two-speed idle test. The non-OBD diesel vehicles are tested with a steady-state opacity test.

DMV and the Department of Environmental Management (DEM) are jointly responsible for the administration of the Rhode Island I/M Program. DMV is responsible for the operation of the program and DEM is responsible for the environmental aspects, including the requirement to submit this report. The majority of vehicles tested during 2012 were tested using OBD. Approximately 92% of the fleet was subjected to OBD testing, whereas tailpipe testing has decreased to 8% of the fleet tested.

Significant Events:

- During January 2012, the Assistant Administrator from DMV requested the Supervising Air Quality Specialist from DEM, be appointed to the Motor Vehicle Safety and Emission Formal Hearing Board along with the Chief of Operator Control of DMV and the Rhode Island State Police.

- During 2012, Systech and their Information Technology (IT) staff continued to follow through with DEM and DMV to address issues with and improve the computer software on the analyzers at the AIRS.

- During April thru September 2012, the roadside checks were conducted by the DMV and the Local Police to promote compliance with the I/M Program.

- During May thru December 2012, the Program Manager and their IT staff began working with DMV and DEM to develop a convenient 24/7 on-line website re-certification training program for the technicians.

- During August 2012, the Program Manager recommended to EPA, DEM and DMV, that they would like to conduct a pilot program in an effort to improve program effectiveness, by installing remote OBD testing units in Verizon Fleet vehicles based in Rhode Island (RI) if approved by EPA.

- During September 2012, EPA approved the pilot program in an effort to improve its program effectiveness with the remote OBD testing units that will be installed into the Rhode Island Verizon Fleet.

- During October 2012, the Program Manager, met with the Region Manager of the Verizon Fleet Operations in MA/RI to discuss the time-line for installing the remote OBD testing units into the RI Verizon fleet in order to begin the pilot program.

- During October 2012 Systech International Inc., consolidated with Environmental Systems Products (ESP) of East Granby, Conn.

- During October 2012, a parking lot survey was performed to gauge compliance with Rhode Island vehicle registrations and inspection requirements.

- During November 2012, the Program Manager began to install the remote OBD testing units into the vehicles of the RI Verizon fleet in order to begin the remote testing pilot program.

2. Significant Events

DEM's Supervising Air Quality Specialist Appointed to Motor Vehicle Safety and Emissions Formal Hearing Board

During January 2012, the Assistant Administrator from DMV requested the Supervising Air Quality Specialist from DEM, be appointed to the Motor Vehicle Safety and Emission Formal Hearing Board along with the Chief of Operator Control of DMV and the Rhode Island State Police.

This formal hearing board is responsible for hearing all cases regarding the Certified Inspection Technicians (CITs), Certified Inspection Repair Technicians (CIRTs) and the Authorized Inspection Repair Stations (AIRS) that have resulted in violations of the Rhode Island General Law (R.I.G.L) § 31-38-10(3) and Rule 1.12.1(b) of the Rhode Island Vehicle Emissions Control Regulation No.1.

Systech International Continues to Upgrade and Improve the Analyzers' Computer Software at the AIRS

Throughout the year, Systech and their Information Technology (IT) staff continued to work with DMV and DEM to improve the computer software on the analyzers at the AIRS. During 2012, there were three upgraded software versions loaded on the analyzers at the AIRS. (Versions 12.01.02) and (12.02.03) and (12.02.04).

Systech submitted results of the acceptance testing for each version of the software to DMV for approval. When the acceptance testing was approved by DMV, Systech proceeded to load it into the analyzers at the five beta testing AIRS to assure the quality and accuracy of the emissions tests before loading it on the analyzers at the remaining AIRS. The beta testing AIRS tested the software for two weeks. Once the AIRS had successfully tested the upgraded software versions and DMV approved the testing, Systech proceeded to load upgraded software on the analyzers at the remaining AIRS.

Roadside Checks Conducted by DMV and Local Police

During April thru September 2012, there were 12 roadside checks conducted throughout the state by the DMV and Local Police, to enforce motorist compliance with the I/M Program. The DMV and Local Police issued a total of 766 "five-day notice and demand tags" for each vehicle out of compliance.

Website Developed for Re-certification Training for Technicians

During May thru December 2012, the Program Manager and their IT staff began working with DMV and DEM to develop a convenient 24/7 on-line website re-certification training program for the technicians. This new program will allow the technicians to complete their two year re-certification training on their two year anniversary of their last test, instead of the technicians having to wait for the Program Manager to schedule the bi-annually scheduled exam.

Program Manager Recommends Pilot Program to Improve Program Effectiveness with Remote OBD Testing Units

During August 2012, the Program Manager recommended to EPA, DEM and DMV that they would like to conduct a pilot program in an effort to improve its program effectiveness, by installing remote OBD testing units in the RI Verizon Fleet vehicles, contingent on receiving EPA's approval.

This system is designed to notify the fleet operator whenever a diagnostic trouble code is stored in the onboard computer, even if that does not trigger a MIL on situation. As a result, the maintenance crew gets early notification that an emission related problem may be developing on a vehicle and can correct it before it blossoms into a full blown issue.

Remote OBD testing can provide the possibility of greater emission reductions through continuous monitoring of the OBD system, improvements in motorist convenience and reduced inspection costs.

EPA Approves Remote Testing Pilot Program

During September 2012, the EPA approved the pilot program in an effort to improve program effectiveness with the remote OBD testing units that will be installed into the RI Verizon Fleet.

Program Manager Meets with the Region Manager of Rhode Island Verizon Fleet Operations in MA/RI

During October 2012, the Program Manager, met with the Region Manager of the Verizon Fleet Operations in MA/RI to discuss the time-line for installing the remote OBD testing units into the RI Verizon Fleet in order to begin the pilot program.

Systech International Merges with Environmental Systems Products (ESP)

During October 2012, Systech International Inc., consolidated with Environmental Systems Products (ESP) of East Granby, Conn.

Parking Lot Survey

During October 2012, the DEM and DMV performed a parking lot survey at the DMV headquarters. There were 772 vehicles with Rhode Island registrations surveyed to find the proportion of valid to invalid or missing stickers.

The Program Manager Installs the OBD Remote Testing Units into the RI Verizon Fleet

During November 2012, the Program Manager began to install the remote OBD testing units into the vehicles of the RI Verizon Fleet.

The data from this pilot program will be available in 2013.

3. Annual Test Data Report

This section reports vehicle inspection data for the period of January 1, 2012 to December 31, 2012. Vehicles subject to the inspection requirement include all light-duty vehicles, 25 years old and newer, up to 8,500 pounds GVWR. Vehicles over 25 years of age are required to undergo inspection but the results relating to emissions are advisory and compliance with the standards is voluntary. New vehicles less than two years old that have not exceeded 24,000 miles are exempt from testing.

The data for this report was submitted by the Program Manager for all the inspection tests performed during 2012. The data was then filtered using a process to eliminate inspection results related to the State's safety inspection program which is performed concurrently with the emissions program. (see Appendix "A" for Systech Reporting Services)

Initial Test Results

The following table provides a breakdown of initial inspections by test type.

Table I: Initial Test Results

Tests	Total	Pass	Fail	% Fail
Initial OBD Tests	320,160	303,286	16,874	5.27%
Initial Transient Tests	20,988	19,489	1,499	7.14%
Initial Two Speed Idle Tests	6,315	4,728	1,587	25.13%
Initial OBD Diesel	1,030	1,007	23	2.23%
Initial Diesel Opacity	196	179	17	8.67%
Total Initial Tests	348,689	328,689	20,000	5.74%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

There were 291 AIRS that participated in the I/M Program during 2012. There were 348,689 tests conducted in 2012. The number of initial test failures was 20,000. This result is an overall initial failure rate of 5.74%.

Table II: Initial Transient Failure Rate

Year	Initial Transient Tests	Initial Transient Failures	% Fail
2000	241,993	15,877	6.56%
2001	314,717	18,524	5.89%
2002	274,456	30,062	10.95%
2003	184,187	24,279	13.18%
2004	116,944	15,924	13.62%
2005	104,041	15,877	15.26%
2006	80,053	10,423	13.02%
2007	63,501	7,451	11.73%
2008	47,941	5,543	11.56%
2009	36,561	3,369	9.21%
2010	29,402	2,696	9.17%
2011	20,543	1,426	6.94%
2012	20,988	1,499	7.14%

As the above table indicates, during 2000 and 2001, the transient failure rate was consistent with the anticipated failure rate of 6% projected in the State Implementation Plan (SIP), due to the use of the phase in cut point standards for tailpipe emissions. Beginning in 2002 the anticipated failure rate was projected to be 15-18%. The failure rate has been lower than anticipated since 2002, except during 2005.

Retest Test Results

Table III: First Retest Results by Test Type

	Total	Pass	Fail	% Fail
OBD First Retests	14,345	13,150	1,195	8.33%
Transient First Retests	1,172	926	246	20.99%
Two Speed Idle First Retests	601	504	97	16.14%
OBD Diesel First Retests	19	18	1	5.26%
Diesel Opacity First Retests	5	3	2	40.00%
Total First Retests	16,142	14,601	1,541	9.55%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table IV: Subsequent Retest Results by Test Type

	Total	Pass	Fail	% Fail
OBD Subsequent Retests	1,108	904	204	18.41%
Transient Subsequent Retests	287	206	81	28.22%
Two Speed Idle Subsequent Retests	113	100	13	11.50%
OBD Diesel Subsequent Retests	1	1	0	0.00%
Diesel Opacity Subsequent Retests	2	2	0	0.00%
Total Subsequent Retests	1,511	1,213	298	19.72%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test value by AIRS, model year and vehicle type)

First Retest Failure Rates of Transient Tests

Table V: First Retest Failure Rates of Transient Tests

Program Year	1st Retest Vehicles	Fail	% Fail
2000	28,892	7,982	28%
2001	21,521	3,970	18%
2002	26,234	5,814	22%
2003	24,207	4,431	18%
2004	16,628	2,668	16%
2005	17,397	2,736	16%
2006	12,038	1,830	15%
2007	8,804	1,295	15%
2008	5,026	760	15%
2009	3,026	630	21%
2010	2,320	522	23%
2011	1,217	243	20%
2012	1,172	246	21%

The above table indicates that the failure rate declined after the first year of the program and, except for 2002, continued to decline through 2004. During 2005 it remained the same as 2004 and declined again during 2006 and remained the same thru 2008. During 2009, thru 2012, the failure rate remained high; probably due to the fact these vehicles are the oldest vehicles on the road, making them very difficult to repair.

Transient Tests

The following tables provide a breakdown of the transient test results.

Table VI: Transient Initial Test Results

Transient Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	15,762	14,631	1,131	7.18%
Trucks	5,226	4,858	368	7.04%
Total Transient Initial Tests	20,988	19,489	1,499	7.14%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table VII: Transient First Retest Test Results

Transient Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	860	688	172	20.00%
Trucks	312	238	74	23.72%
Total Transient First Retests	1,172	926	246	20.99%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table VIII: Transient Subsequent Test Results

Transient Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	196	141	55	28.06%
Trucks	91	65	26	28.57%
Total Transient Subsequent Tests	287	206	81	28.22%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Two Speed Idle Tests

The following tables provide a breakdown of the two speed idle test results.

Table IX: Two Speed Idle Initial Test Results

Two Speed Idle Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	4,742	3,539	1,203	25.37%
Trucks	1,573	1,189	384	24.41%
Total Two Speed Initial Tests	6,315	4,728	1,587	25.13%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table X: Two Speed Idle First Retest Test Results

Two Speed Idle Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	389	322	67	17.22%
Trucks	212	182	30	14.15%
Total Two Speed First Retests	601	504	97	16.14%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table XI: Two Speed Idle Subsequent Test Results

Two Speed Idle Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	75	63	12	16.00%
Trucks	38	37	1	2.63%
Total Two Speed Subsequent Tests	113	100	13	11.50%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

On-Board Diagnostics Testing

An on-board diagnostic system test is an inquiry of the vehicle's on-board computer. An OBD test is considered a failure when:

- Current Diagnostic Trouble Codes are indicated and the Malfunction Indicator Light (MIL) is commanded or,
- MY 2001 and newer vehicles, more than one monitor in a vehicle's on board computer is not set as ready; or,
- MY 1996-2000 vehicles, more than two monitors in a vehicle's on-board computer are not set as ready.

If the vehicle's OBD system is not communicating with the RI2007 analyzer, the vehicle shall undergo the appropriate exhaust emissions test.

The following table provides a breakdown of the initial OBD tests.

Table XII: OBD Initial Test Results

Tests	OBD Total Tests	OBD Pass	OBD Fail	OBD Fail %	MIL Pass	MIL Fail	MIL Fail %	Monitor Ready Pass	Monitor Ready Fail	Monitor Ready Fail %
Passenger Vehicles	226,682	215,178	11,504	5.07%	221,958	4,389	1.94%	219,306	7,041	3.11%
Trucks	93,478	88,108	5,370	5.74%	91,295	2,049	2.19%	90,026	3,318	3.55%
Total	320,160	303,286	16,874	5.27%	313,253	6,438	2.01%	309,332	10,359	3.24%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table XIII: OBD First Retest Test Results

Tests	OBD Total Tests	OBD Pass	OBD Fail	OBD Fail %	MIL Pass	MIL Fail	MIL Fail %	Monitor Ready Pass	Monitor Ready Fail	Monitor Ready Fail %
Passenger Vehicles	9,691	8,868	823	8.49%	9,438	223	2.30%	9,054	607	6.26%
Trucks	4,654	4,282	372	7.99%	4,535	108	2.32%	4,378	265	5.69%
Total	14,345	13,150	1,195	8.33%	13,973	331	2.31%	13,432	872	6.08%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table XIV: OBD Subsequent Retest Test Results

Tests	OBD Total Tests	OBD Pass	OBD Fail	OBD Fail %	MIL Pass	MIL Fail	MIL Fail %	Monitor Ready Pass	Monitor Ready Fail	Monitor Ready Fail %
Passenger Vehicles	787	630	157	19.95%	733	51	6.48%	668	116	14.74%
Trucks	321	274	47	14.64%	300	20	6.23%	293	27	8.41%
Total	1,108	904	204	18.41%	1,033	71	6.41%	961	143	12.91%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

The following table provides a comparison of the (Non-Diesel) OBD Tests.

Table XV: OBD (Non Diesel) Comparison Chart

Tests	Total Tests	OBD Pass	OBD Fail	OBD Fail %	MIL Pass	MIL Fail	MIL Fail %	Monitor Ready Pass	Monitor Ready Fail	Monitor Ready Fail %
Initial Test										
Passenger	226,682	215,178	11,504	5.07%	221,958	4,389	1.94%	219,306	7,041	3.11%
Truck	93,478	88,108	5,370	5.74%	91,295	2,049	2.19%	90,026	3,318	3.55%
Total	320,160	303,286	16,874	5.27%	313,253	6,438	2.01%	309,332	10,359	3.24%
First Retest										
Passenger	9,691	8,868	823	8.49%	9,438	223	2.30%	9,054	607	6.26%
Truck	4,654	4,282	372	7.99%	4,535	108	2.32%	4,378	265	5.69%
Total	14,345	13,150	1,195	8.33%	13,973	331	2.31%	13,432	872	6.08%
Subsequent Test										
Passenger	787	630	157	19.95%	733	51	6.48%	668	116	14.74%
Truck	321	274	47	14.64%	300	20	6.23%	293	27	8.41%
Total	1,108	904	204	18.41%	1,033	71	6.41%	961	143	12.91%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

A total of 320,160 OBD non-diesel vehicle tests were initially conducted using OBD in 2012. This represents 92% of all OBD vehicle tests. The overall failure rate was 5.27%. The OBD MIL produced a 2.01% failure rate and monitor readiness accounted for a 3.24% failure rate.

As the above chart indicates there were 14,345 OBD non-diesel vehicle re-tests with an overall failure rate of 8.33%. There were 1,108 OBD non-diesel vehicle test failures in subsequent tests, an overall failure rate of 18.41%.

Diesel OBD Testing

The following tables provide a breakdown of initial diesel OBD tests on passenger vehicles and trucks.

Table XVI: Diesel OBD Initial Test Results

Tests	OBD Diesel Total Tests	OBD Diesel Pass	OBD Diesel Fail	OBD Diesel Fail %	OBD Diesel MIL Pass	OBD Diesel MIL Fail	OBD Diesel MIL Fail %	OBD Diesel Monitor Ready Pass	OBD Diesel Monitor Ready Fail	OBD Diesel Monitor Ready Fail %
Passenger Vehicles	948	926	22	2.32%	929	18	1.90%	947	0	0.00%
Trucks	82	81	1	1.22%	81	0	0.00%	81	0	0.00%
Total	1,030	1,007	23	2.23%	1,010	18	1.75%	1,028	0	0.00%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table XVII: Diesel OBD First Retest Test Results

Tests	OBD Diesel Total Tests	OBD Diesel Pass	OBD Diesel Fail	OBD Diesel Fail %	OBD Diesel MIL Pass	OBD Diesel MIL Fail	OBD Diesel MIL Fail %	OBD Diesel Monitor Ready Pass	OBD Diesel Monitor Ready Fail	OBD Diesel Monitor Ready Fail %
Passenger Vehicles	19	18	1	5.26%	18	1	5.26%	19	0	0.00%
Total	19	18	1	5.26%	18	1	5.26%	19	0	0.00%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table XVIII: Diesel OBD Subsequent Retest Test Results

Tests	OBD Diesel Total Tests	OBD Diesel Pass	OBD Diesel Fail	OBD Diesel Fail %	OBD Diesel MIL Pass	OBD Diesel MIL Fail	OBD Diesel MIL Fail %	OBD Diesel Monitor Ready Pass	OBD Diesel Monitor Ready Fail	OBD Diesel Monitor Ready Fail %
Passenger Vehicles	1	1	0	0.00%	1	0	0.00%	1	0	0.00%
Total	1	1	0	0.00%	1	0	0.00%	1	0	0.00%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Diesel Opacity Testing

The following tables provide a breakdown of initial diesel opacity tests on passenger vehicles and trucks.

Table XIX: Diesel Opacity Initial Test Results

Diesel Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	167	153	14	8.38%
Trucks	29	26	3	10.34%
Total Initial Diesel Opacity Tests	196	179	17	8.67%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table XX: Diesel Opacity First Retest Results

Diesel Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	3	1	2	66.67%
Trucks	2	2	0	0.00%
Total First Retests Diesel Opacity Tests	5	3	2	40.00%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

Table XXI: Diesel Opacity Subsequent Retest Results

Diesel Tests	Total	Pass	Fail	% Fail
Passenger Vehicles	2	2	0	0.00%
Total Subsequent Diesel Opacity Tests	2	2	0	0.00%

(see Appendix "B" for detailed test volume by test type, model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

A diesel opacity test is performed on non-OBD diesel opacity vehicles. A failure occurs when opacity is greater than 20%.

OBD MIL Codes

Table XXII: OBD MIL Codes

OBD Tests	MIL Commanded On **No** Codes Stored (Fail)	MIL Not Commanded On Codes Stored (Fail)	MIL Commanded On Codes Stored (Fail)	MIL Not Commanded On **No** Codes Stored (Pass)
Passenger Vehicles	0	14,733	4,389	207,102
Trucks	0	6,480	2,049	84,744
Total	0	21,213	6,438	291,846

(see Appendix "D" for detailed initial results for OBD MIL codes by model year and vehicle type and Appendix "C" for detailed initial test volume by AIRS, model year and vehicle type)

As the above table indicates there were no OBD vehicles tested that exhibited the "MIL Commanded On" that did not have a code stored. All these vehicles tested had codes stored when the MIL was commanded on. There were 21,213 vehicles tested with the "MIL not Commanded on" and codes were stored. There were 6,438 vehicles tested with the "MIL Commanded On" and the codes were stored. There were 291,846 vehicles that were tested with the "MIL not Commanded On", and no codes were stored, which resulted in the vehicle passing the test.

Gas Cap Test

The gas cap test is conducted on all non-OBD vehicles (that is model year 1995 and older). The following table indicates the results of the gas cap results.

Table XXIII: Initial Fuel Cap Results

Fuel Cap Tests	**Total**	**Pass**	**Fail**	**% Fail**
Passenger Vehicles	18,884	18,678	206	1%
Trucks	6,724	6,637	87	1%
Total Initial Tests	25,608	25,315	293	1%

(see Appendix "E" for detailed fuel cap results by model year and vehicle type and Appendix "C" for detailed initial test volume by model year and AIRS)

Vehicles with No Know Final Outcome

Table XXIV Vehicles with No Known Final Outcome

Initial Failure Results	Passenger Vehicles	Truck Vehicles	Total Initial Failures
Tests			
OBD Initial Failure	11,504	5,370	16,874
Transient Initial Failure	1,131	368	1,499
Two Speed Idle Initial Failure	1,203	384	1,587
Diesel OBD Initial Failure	22	1	23
Diesel Opacity Initial Failure	14	3	17
Total Initial Failures			**20,000**
Retest Pass Results			**Total Retest Pass Results**
OBD First Pass Retests	8,868	4,282	13,150
Transient First Pass Retests	688	238	926
Two Speed Idle First Pass Retests	322	182	504
Diesel OBD First Pass Retests	18	0	18
Diesel Opacity First Pass Retests	1	2	3
Total First Retest Pass			**14,601**
Subsequent Pass Results			**Total Subsequent Pass Results**
OBD Subsequent Pass Retests	630	274	904
Transient Subsequent Pass Retests	141	65	206
Two Speed Idle Subsequent Pass Retests	63	37	100
Diesel OBD Subsequent Pass Retests	1	0	1
Diesel Opacity Subsequent Pass Retests	2	0	2
Total Subsequent Retest			**1,213**
Totals			
Total Initial Failures	20,000		
First Retest Pass	-14,601		
Subsequent Retest Pass	-1,213		
Two Speed Idle Test to Transient Test	-44		
Exempt Vehicles/Sticker Issued	-1392		
Vehicles Failed in 2012 and re-tested in January, February, March 2013	-455		
Waivers Issued by DMV during 2012	-91		
Total Vehicles with No Known Final Outcome	2,204		

(see Appendix "F" for vehicles with no known final outcome with model year, test type, vehicle type and vehicle Identification number (VIN) list of unknown vehicle outcome and VIN list of unknown vehicle outcome with 3 months lookup table)

As the above table indicates, there were a total of 20,000 initial vehicle test failures during 2012. There were 14,601 tests where the vehicle passed the first retest and a total of 1,213 vehicle tests that passed the subsequent test.

There were 44 vehicles that received a pass result outside of their initial failing test set. When the initial test was performed it received a TSI test and failed the inspection. It was retested with a transient test. The reason for this discrepancy is during 2012, the DMV implemented a software change at the AIRS that allowed the inspectors to choose the type of test to perform on a vehicle, regardless of the type of test performed in the past. In the previous years, the inspector was locked into the testing method that was used the first time the test was performed.

There were a total of 1,392 exempt vehicles (25 years old) that failed the emissions test but were issued an inspection. They are required to undergo an inspection, but the results relating to emissions are advisory and compliance with the standards is voluntary.

There were a total of 455 vehicles that failed the inspection during 2012 and were retested during January, February and March (2013).

There were a total of 91 waivers issued by DMV during 2012.

This leaves an overall balance of 2,204 vehicles with no known final outcome.

During 2012, the percentage of vehicles with no known final outcome has been reduced to 11.5% which puts Rhode Island slightly below the national average for vehicles with no known final outcome.

These 2,204 vehicles may represent vehicles:

- Inspected during 2012, failed and still are not returned for an inspection before April 1, 2013
- have been moved out of Rhode Island, or
- have been scrapped, or are illegally operating with expired inspections

4. Waivers

In Rhode Island, three different types of waivers are available if a vehicle fails the emissions test and a retest. The waiver types are:

- A diagnostic waiver applies to vehicle owners whose vehicles have all emission control devices in place and operating and no additional repairs are reasonably possible or because they are unable to get their vehicle repaired because the necessary emission parts are no longer available or no longer manufactured.

- A repair cost limit waiver is available for vehicle owners if the vehicle failed the emission test and the owner has spent a minimum

of $700 on emission-related parts and/or labor (labor must be performed by a CIRT to qualify) and the vehicle still does not pass.

- A repair time delay waiver is available for vehicle owners who can prove financial hardship.

During 2012, there were a total of 91 waivers issued: 48 repair cost waivers, 41 repair time-delay waivers and 2 diagnostic waivers were issued. Of the 91 waivers issued, there was one cost limit waiver issued in January 2012, due to the results of the vehicle failing its initial test during the previous calendar year (2011) and completing the retest in the following year (2012). The remaining 90 waivers were issued to vehicles that failed the inspection during 2012. The overall 2012 waiver rate is 0.46%. (see Appendix "G" for Waivers)

Table XXV: Waivers - Year by Year Comparison

Year	Number of Failed Vehicles	Waivers Granted	Waiver Rate
2000	36,090	1,568	4.30%
2001	21,223	440	2.07%
2002	31,473	219	0.70%
2003	32,152	221	0.69%
2004	28,126	126	0.45%
2005	28,585	151	0.53%
2006	21,923	96	0.44%
2007	18,174	70	0.39%
2008	17,814	53	0.30%
2009	27,241	149	0.55%
2010	24,458	125	0.51%
2011	21,009	137	0.65%
2012	20,000	91	0.46%

As the above table indicates in 2000, the first year of the I/M program, the waiver rate was slightly above the 3% estimated in the I/M SIP. Since 2001 the waiver rate has remained below the 3%, potentially due to the continued training seminars and OBD training, resulting in improved repair effectiveness. Additionally, DMV continues to follow the strict guidelines defined in Rhode Island Motor Vehicle Safety and Emissions Control Regulation No.1, section 1.9.1 Waiver Requirements and Conditions.

5. Average Emission Reductions

Table XXVI:

Average Emissions Reductions after Repairs in 2012 (grams per mile)

	HC	CO	NO_x
Initial Test	7.06	57.91	2.83
Average Emissions After Repairs	0.82	6.60	1.06
Difference	6.24	51.31	1.77
Average Percent Reduction	88.39%	88.60%	62.54%

(see Appendix "H" for average emission reductions after repairs by model year and vehicle type)

The average emissions reduction after repairs is reported as an indicator of the effectiveness of the I/M program. These results indicate that the main objective of the program, to find high emitters and have them repaired, is being fulfilled.

Table XXVII:

Yearly Comparison HC, CO and NO_x Average Emissions Reductions after Repairs

Year	Average HC Reductions	Average CO Reductions	Average NO_x Reductions
2000	68.50%	81.10%	38.50%
2001	70.42%	82.03%	49.32%
2002	70.11%	81.56%	62.59%
2003	72.50%	82.84%	63.20%
2004	72.24%	82.87%	62.04%
2005	72.40%	82.34%	61.19%
2006	72.69%	82.36%	63.13%
2007	75.27%	80.76%	64.83%
2008	73.66%	83.71%	66.34%
2009	90.63%	84.69%	90.41%
2010	88.13%	89.93%	85.87%
2011	79.21%	85.41%	61.97%
2012	88.39%	88.60%	62.54%

The data in Table XXVII indicate that the average emissions reductions after repairs for HC and CO have continued to remain high since the I/M Program was implemented during 2000 and the NO_x reduction has continued to remain high from 2002. The emission reductions are the results of the repairs on the vehicles that have failed. The lower reductions in 2000 and 2001 for NOx indicate that the repair industry was not familiar with repairs for high emissions for the first two years of the I/M Program.

6. Training

Rhode Island has two levels of technician training in the I/M Program. The first level is the Certified Inspection Technician (CIT). The second level is the Certified Inspection Repair Technician (CIRT).

There are two steps a technician must complete in order to become a CIT. The first step is to complete the training provided by DMV for the safety inspection portion of the I/M Program. The second step required is a four hour course provided by the Program Manager, training the CIT for the emissions inspection portion of the I/M Program. They are required to pass an exam before being certified. CITs are certified only to perform vehicle safety and emission inspections.

The CITs certification is valid for two years. The CITs were due to complete their re-certification training during 2012, however, the Program Manager and their IT staff worked with DMV and DEM from May thru December 2012, to develop and implement a convenient 24/7 on-line website re-certification training program for the technicians to have access too. This new re-certification program will allow the technicians to complete their two year re-certification training on their two year anniversary of their last test, instead of the technicians having to wait for the Program Manager to schedule the bi-annually scheduled exam.

The website re-certification training for the technicians will begin in January 2013 and will be completed by April 2013.

CIRTs perform both inspections and repairs for motor vehicle safety and emissions issues. Only CIRTs can perform repairs whose costs qualify for the repair cost waiver. CIRTs are required to first obtain their CIT certification, then pass the RI CIRT written exam or possess an Automotive Service Excellence (ASE) Level 1 Advanced Engine Performance license. If a CIRT does not have their ASE L1 license, they have two years to obtain it to continue certification.

At the end of 2012, there were a total of 1294 active technicians in the network, including CITs and CIRTs.

This continued technician training and certification program, conducted over the years has helped to improve and sustain repair effectiveness as noted by the high level of emissions reductions after repairs as listed in Table XXVII.

7. Quality Assurance

Inspection Network Participation

At the end of December 2012, 291 inspection stations representing 291 lanes were in the inspection network throughout the state. The number of Authorized Inspection Repair Stations has remained steady during the duration of the program ranging from 287-294. The continued level of participation is an indicator of the good health of Rhode Island's I/M program.

Audit Types

Auditing continues to provide a direct oversight of the testing process and ensures that accurate quality inspections are being conducted by (AIRS). Overt, covert and computer auditing are employed in the Rhode Island Emissions & Safety Inspection Program. Auditing is conducted by DMV and the Program Manager.

The Program Manger performs: overt visual audits, covert visual audits, covert vehicle audits, gas bench audits, vehicle mass analysis system (VMAS) audits, zero air generator (ZAG) maintenance and covert digital audits including OBD fraud digital auditing with VIN mismatches, OBD readiness monitor mismatches and all OBD parameters. The results of these audits and any irregularities discovered are noted and reported to DMV and DEM via e-mail notifications.

Overt Visual Audits

The overt visual audits consist of checking the reliability of the testing equipment, observation of an inspection, the legibility of the stickers and missing and or voided stickers. The voided stickers are picked up and stored in a secure location with the Program Manager. If there are stickers missing, the AIRS are required to fill out a police report and submit it to DMV and DMV personnel will follow up on the report.

Covert Visual Audits

The covert visual audits consist of observing a vehicle inspection while unseen and from a distance.

Covert Vehicle Audits

The covert vehicle audits during 2012, involved one undercover auditor and one covert vehicle (2000) Toyota Corolla, that was purchased by Systech International, the Program Manager.

The DMV and the Program Manager rigged the covert vehicle to fail emissions and safety inspections. The emissions failures were set to fail

a gas cap inspection by removing the O-ring from the fuel gas cap and an on-board diagnostics (OBD) emissions test by removing the Malfunction Illumination Light (MIL) bulb. The safety failures were set to fail by creating a faulty parking brake by adjusting the brake so it would not hold and by creating a faulty high-beam head light by removing the fuse.

A baseline inspection was conducted by the DMV prior to the covert vehicle audit and compared to the results of the station inspection and a post inspection confirmation audit.

Covert OBD Digital Auditing

The OBD covert digital auditing consists of an analysis of inspection data to uncover any irregularities and unusual testing patterns, including OBD VIN mismatches, OBD readiness monitor mismatches, and all OBD parameters. These inspection tests are scanned daily for any inconsistencies in the data. If any inconsistencies are found, a trigger is set resulting in an e-mail notification to the DEM and DMV for enforcement consideration.

Audit Activity

Overt Audits

The Division of Motor Vehicle and the Program Manger conducts overt visual audits to assure adherence to program procedures and regulations. The audit is a visual performance audit that consists of an observation of test procedures, observation of an inspection, inspection of the workplace, a check of AIRS signage and certificate posting and an examination of testing records**.** (see Appendix "I" for Audit Types)

A total of approximately 3,445 overt audits were conducted by DMV and the Program Manager during 2012. DMV conducted approximately 2,244 overt audits and the Program Manager conducted 1,201.

Covert Audits

The Program Manager was required to complete one covert visual audit per year for each station (291) and 50 covert vehicle audits annually.

During 2012, the Program Manager performed one covert visual per station for a total of 291 covert visual audits and a total of fifty covert vehicle audits that were performed during October, November and December of 2012.

OBD Digital Auditing

During 2012, the Program Manager performed 468 automated digital audits by scanning the VID (Vehicle Information Database) for any mismatches for OBD VIN (Vehicle Identification Number), OBD readiness monitor mismatches and all OBD parameters. These inspection tests are scanned daily for any inconsistencies in the data. If any inconsistencies are found, a trigger is set resulting in an e-mail notification to the DEM and DMV for enforcement consideration.

The enforcement on the I/M Program continues to increase as a result of this OBD Digital Auditing.

Gas Bench Audits

During 2012, the Program Manager performed 291 on-site gas bench audits, including an additional 13 (retests) bringing the total to 304 on-site gas bench audits on each analyzer at the AIRS, including the DMV facility to ensure the integrity and functionality of the gas benches in the equipment. Each facility received a five point (zero, low, mid low, mid high and high) gas bench audit. These audits ensure the integrity and the functionality of the gas benches used during non-OBD inspections. The failure rate was 7.6%. Failed units were repaired to proper operating conditions.

Vehicle Mass Analysis System (VMAS) Audits

The workstation analyzer and VMAS together provide mass emission measurement capability during non-OBD inspections. The analyzer measures HC, CO, O_2 and NO_x concentrations by drawing samples from inside the vehicle tailpipe and conducting chemical analyses of the samples.

During 2012, the Program Manager performed 291 VMAS maintenance audits at the AIRS. The VMAS tubes were audited and if the equipment needed calibration or replacement, a service call for on-site maintenance was placed. These audits assure the integrity of the emissions test.

Zero Air Generator (ZAG) Maintenance

During 2012, the Program Manager continued to follow the manufacturer recommendation for the maintenance on the ZAGs at all 291 AIRS, which included the NO_x scrubber, catalytic cylinder, pre-filter element, and the high grade inline particulate filter. This maintenance is performed per manufacture recommendation to ensure the integrity and the functionality of the ZAG to produce "zero air" (for use in equipment calibration for non-OBD inspections).

Audit Results

Verbal warnings are issued for each incident of violation. Formal hearings require an escalation of severity of infractions and documented evidence. During 2012, there were a total of 64 hearings; 32 formal hearings were conducted for the Authorized Inspection and Repair Station (AIRS), 32 formal hearings were conducted for the Certified Inspection Technicians (CITs), as a result of the covert OBD fraud digital auditing.

The results of the hearings are as follows:

Table XXVIII: Enforcement Statistics

2012	Total Hearings	10 Days Suspension	15 Days Suspension	30 Days Suspension	180 Days Suspension	1 Year Suspension	Revoked
AIRS	32	6	0	3	2	4	9
CITS	32	3	1	3	5	4	2
Total Hearings	64						

2012	Warning Notices	To Be Continued	Dismissed	**Total Suspensions**
AIRS	6	20	2	**24**
CITS	13	20	2	**18**
Total Suspensions				**42**

Twenty-four AIRS were suspended for violating the conditions of the inspection permit

- Six were suspended for 10 days
- Three were suspended for 30 days
- Two were suspended for 180 days
- Four were suspended for one year
- Nine had their licenses revoked
- Six were issued a warning for violating the conditions of the inspection permit
- Twenty cases were scheduled to be continued at a later date
- Two cases were dismissed

Eighteen CITs were suspended for conducting improper inspections:

- Three were suspended for 10 days
- One was suspended for 15 days
- Three were suspended for 30 days
- Five were suspended for 180 days
- Four were suspended for 1 year
- Two had their licenses revoked
- Thirteen were issued a warning notice for violating the conditions of the inspection permit
- Twenty cases were scheduled to be continued at a later date
- Two cases were dismissed

The following table indicates the results of the Covert Vehicle Audits.

Table XXIX: Covert Vehicle Enforcement Statistics

2012	Total Hearings	10 Days Suspension	30 Days Suspension	180 Days Suspension	Official Warning Letter Issued	**Total Suspensions**
AIRS	7	0	0	1	6	**1**
CITS	7	1	3	0	3	**4**
Total	14	1	3	1	9	**5**

During 2012, there were a total of 14 covert vehicle hearings; 7 formal hearings were conducted for the Authorized Inspection and Repair Station (AIRS), 7 formal hearings were conducted for the Certified Inspection Technicians (CITs), as a result of the covert vehicle audits that were performed during the last quarter of the year during 2011.

There was one AIRS whose license was suspended for 180 days for performing fraudulent vehicle inspections. There were 6 warning letters issued to the AIRS for violating the conditions of the inspection permit.

There was one CIT suspended for ten days and three CITS suspended for 30 days for performing fraudulent vehicle inspections. There were three warning letters issued to the CITs for violating the conditions of the inspection permit.

During 2012, the Program Manager was scheduled to complete 50 covert vehicle audits. The vehicle was presented at 50 AIRS during October, November and December 2012.

Of the fifty covert vehicle audits performed by the Program Manager, there were twelve inspectors that performed the covert vehicle inspection correctly. There

were thirty-eight covert vehicle inspections performed incorrectly by the inspectors.

The DMV issued a total of seventy-six official warning letters to the AIRS and to the CITS for performing improper covert vehicle inspections. There were thirty-eight official warning letters issued to the AIRS and there were thirty-eight official warning letters issued to the CITS for performing improper covert vehicle inspections, i.e., improper gas cap inspections where the O ring was missing, an improper KOEO test, and safety violations.

As a result of the covert vehicle audits, DMV also issued twenty-four proper inspection letters to the AIRS and to the CITS. There were twelve proper inspection letters issued to the AIRS and twelve proper inspections letters issued to the CITS for performing proper inspections in accordance with all the regulations and procedures.

There were an additional 44 safety vehicle violations found by the auditor during the covert vehicle inspections.

One of the covert vehicle audits performed in November 2012 was called in for a hearing during 2012, however, it was postponed until 2013.

There were no monetary fines issued.

The schedule of penalties calls for a first violation penalty of a minimum of ten day suspension, a second violation requires a minimum of thirty days; the third and subsequent violations are subject to a suspension of authorization to inspect motor vehicles for a minimum of six months for each separate violation. In addition to the suspension penalties the Administrator may, at his discretion, impose a fine of up to $1,000. Reinstatement may be requested by the station owner at the end of a suspension period. The reinstatement shall be at the discretion of the hearing board or the Administrator. (see Appendix "J" DMV Safety and Emissions Control Regulation No. 1, section 1.15)

8. Enforcement

Vehicles Subject to Inspection

As of December 2012, approximately 675,250 light duty vehicles (MY 1988-2010) were registered with DMV. The actual number of vehicles requiring inspection during 2012 can be estimated from the total number of vehicles registered. Additionally, because the requirement for inspection exempts vehicles 25 years old and older and vehicles two years old or newer, the number of vehicles subject to inspection in a given year is also impacted. Reviewing the registration data as of December 2012, and assuming a 50-50 biennial split, as many as 337,625 vehicles may have been required to be inspected during 2012. Based on data from the Program Manager, (MY 1988-2010) there were 330,012

vehicles inspected. This leaves a balance of approximately 7,613 (2.3%) vehicles possibly not in compliance.

Table XXX: Vehicles Subject to Inspection

Vehicles Subject to Inspection	**2008**	**2009**	**2010**	**2011**	**2012**
Non-Exempt Vehicles Registered with DMV (MY 1988-2010)	808,468	800,992	777,420	771,529	675,250
As many vehicles as:	354,432	357,705	347,050	340,898	337,625
Vehicles Inspected (MY 1988-2010)	330,580	335,750	344,505	337,659	330,012
Vehicles possibly not in compliance	23,852	21,955	2,545	3,239	7,613
Total Percentage	6.7%	6.1%	.74%	.95%	2.3%

As mentioned in the above paragraph these totals are estimated based on the data provided to DEM from DMV. The data submitted to DEM for the number of non-exempt vehicles (1988-2010) has been recorded only through to December 4, 2012. Due to the limitations in DMV's existing data management system, it is not possible to know how many vehicles were registered. (see Appendix "K" Vehicles Subject to Inspection).

Parking Lot Survey

During October 2012, a parking lot survey was performed by the DMV and DEM at the DMV headquarters centrally located in Rhode Island. There were 772 vehicles with Rhode Island registrations surveyed to find the proportion of valid to invalid or missing stickers.

Table XXXI: 2012 Parking Lot Survey Results

Year	2000	2000	2007	2007	2009	2009	2012	2012
Inspection Status	**Number of Vehicles**	**Percentage of Vehicles**	**Number of Vehicles**	**Percentage of Vehicles**	**Number of Vehicles**	**Percentage of Vehicles**	**Number of Vehicles**	**Percentage of Vehicles**
Vehicles with Valid Stickers	761	76.1%	778	75.7%	652	81.9%	648	83.94%
Vehicles with Expired Stickers	**56**	**5.6%**	**63**	**6.1%**	**32**	**4.0%**	**32**	**4.15%**
Counterfeit Stickers					**4**	**.50%**	**0**	**0**
Vehicles with no Sticker; clearly older than two model years old	74	7.4%	19	1.8%	16	2.0%	16	2.07%
Non Compliance	**130**	**13%**	**82**	**7.9%**	**52**	**6.5%**	**48**	**6.2%**
Vehicles with no Sticker; likely less than two years old	109	10.9%	168	16.3%	92	11.6%	76	9.84%

As the above table indicates, the non compliance rate has continued to decrease since 2000. In 2000 the non compliance rate was 13%, during 2007, it decreased to 7.9%, during 2009 it decreased to 6.5% and during 2012 it decreased slightly to 6.2% This reduction of the non-compliance vehicles may be the result of the notice of action letters being sent to motorists, along with the continued enforcement through the DMV, local and State Police with the road side pullovers during the year.

Preventing False Registration by Motorist

The I/M program in Rhode Island covers the entire state, so it is not possible for a vehicle owner to falsely register any vehicle out of the program area. Inspectors are instructed to verify that the fuel type and the gross vehicle weight (GVWR) indicated on the vehicle's registration form are accurate. The inspector will check the information on the label on the inside of the door to see if the correct information can be obtained.

Motorist Enforcement Measures

Sticker Based Enforcement

The following tables indicate the results of the sticker summary during 2012.

Table XXXII: 2012 Sticker Summary

Total Stickers Distributed

Stickers Distributed	391,500
Stickers Voided	- 45,904
Stickers Not Used	- 1,807
Total Stickers Used	343,789

The above table indicates that during 2012, there were 391,500 stickers distributed. There were 45,904 stickers voided during the inspections for various reasons, i.e., such as the sticker not printing properly or the sticker getting stuck in the printer. There were 1,807 stickers not used. This results in a total of 343,789 stickers that were used during 2012. (see Appendix "L" Sticker Summary)

Total Stickers Used

Sticker Count	1	2	3	4	7	16	
Extra Stickers/Test sets	0	1	2	3	6	15	Total
Test Set Count	334,039	4,668	125	4	1	1	338,838
Extra Stickers	0	4,668	250	12	6	15	+ 4,951
Total Stickers Used	334,039	9,336	375	16	7	16	343,789

The above table indicates that during 2012 there were a total of 343,789 stickers used. There were a total of 4,951 extra stickers that were issued during 2012, from the vehicles that are owned by dealerships in Rhode Island. These vehicles are required to be inspected within ninety (90) days prior to the date of the sale of a vehicle, or an inspection conducted at a point no more than 500 vehicle odometer miles prior to the date of sale, whichever shall occur first. (see Appendix "L" Sticker Summary)

Total Test Set Count

Unique VINs	343,030
No Known Outcome for Emissions	-2,750
No Known Outcome for Safety	-1,442
Test set Count	338,838

The above table indicates there were a total of 338,838 total test sets during 2012.

There were 2,750 VINs with no known outcome for emissions and 1,442 VINs with no known outcome for safety; i.e., failed and did not return for an inspection test before 12/31/12. This results in a total of 338, 838 total test sets. (see appendix "L" Sticker Summary)

The inspection sticker has continued throughout the years to be the primary inspection enforcement tool. This highly visible means of recognition allows police agencies to quickly determine a vehicle's compliance status. DMV continues to provide information to the municipal police and the State Police regarding the features of the inspection stickers. Any law enforcement officer or an agent of DMV may demand to inspect any compliance device (sticker) or compliance document (inspection report or waiver) issued through the Rhode Island I/M Program. (see Appendix "J" DMV Safety and Emissions Control Regulation No. 1, section 1.4)

The State Police and municipal police continue to enforce motorists' compliance by pulling vehicles over if an inspection sticker is not valid. During 2012 approximately 7,996 "five-day notice and demand tags" were issued by the police. The notice and demand tags require an inspection be completed within five days. About 84% or 6,720 vehicles complied with the 5-day notice and demand tags. The DMV suspended the registration of 1,276 vehicles whose owners failed to reply to the notice and demand tags. (see Appendix "M" Notice and Demand form)

During April through September 2012, there were twelve road side checks conducted in the state by the DMV and the Local Police. During this check there were 766 vehicles found to be out of compliance. There were 355 vehicles found to have invalid inspection stickers and there were a total of 340 safety violations found. The DMV and the Local Police issued "five-day notice and demand tags" for each vehicle out of compliance. The notice and demand tags require an inspection to be completed within five days. DMV suspended the registration of 292 vehicle owners who failed to reply to the notice and demand tags. Of the 292 that were suspended 62% eventually complied.

Also, during the check there were a total of 30 vehicles found to be less than two years with more than 24,000 on the odometer.

During April 2012, the DMV implemented a new computerized system for tracking the total of the "five-day notice and demand tags" that are issued. The "five-day notice and demand tags" are printed with a barcode and scanned into a data base when they are issued. When the DMV receives the compliance tag from the motorist, the copy is scanned into the data base and is matched up with the original "five-day notice and demand tags" that was issued.

During 2012, the data for the "five-day notice and demand tags" has been estimated from January thru April 2012, because the new computerized system was not implemented until April 2012.

Registration Denial

DMV receives data from the Program Manager when vehicles are inspected. Based on DMV records from previous inspections, a notice of action (notice) is mailed out to vehicle owners who have failed to obtain a vehicle inspection when due. The notice indicates the vehicle owner has 30 days to obtain an inspection before the vehicle's registration is suspended. At the end of 30 days, if the vehicle has not passed an inspection based on the daily data submission from the Program Manager, the registration is suspended in the DMV registration database. Due to limitations in DMV's existing data management system, it is not possible to determine the day to day status of these notices. Additionally, it is not possible to know how many notices were mailed each day during 2012; however, we do know that approximately 43,286 notices were outstanding as of the end of December 2012. (see Appendix "N" Notice of Action Form)

When the new state wide computer system is implemented, the registration data will allow us to track the actual number of notices mailed each day and to track the compliance status of these notices.

Enforcement Against, AIRS, Program Manager and DMV Personnel

Program Manager

There were no enforcement actions taken against the Program Manager during 2012.

Inspection Stations and Inspectors

Authorized Inspection and Repair Station (AIRS)

During 2012, a total of twenty-five AIRS were suspended for violating the conditions of the inspection permit.

DMV held a total of thirty-nine hearings during the year for the AIRS related to the OBD fraud digital auditing and covert vehicle audits. There were thirty-two formal hearings conducted for the AIRS related to OBD fraud digital auditing and seven formal hearings conducted for the AIRS related to the covert vehicle audits. The AIRS were given an opportunity to review all complaints in their files and to explain why they performed improper inspections. (see Table XXVIII and Table XXIX)

Inspectors

During 2012, a total of twenty-five CITs were suspended for violating the conditions of the inspection permit.

DMV held a total of thirty-nine hearings during the year for the CITs related to the OBD fraud digital auditing and covert vehicle audits. There were thirty-two formal

hearings conducted for the CITs related to OBD fraud digital auditing and seven formal hearings conducted for the CITs related to the covert vehicle auditing. The CITs were given an opportunity to review all complaints in their files and to explain why they performed improper inspections. (see Table XXVIII and Table XXIX).

The Rhode Island Motor Vehicle Safety and Emissions Control Regulation No. 1, section 1.14. allows the withdrawal of the designation as a CIRT or CIT by the State for good cause at any time.

DMV Auditors and Other Personnel

DMV auditors must adhere to specific procedures and follow a checklist when conducting an audit. The work of DMV auditors is scrutinized by their immediate supervisor on a daily basis.

9. Public Outreach

The "RI Emissions Safety Testing" newsletter was distributed in October 2012, to the AIRS throughout the state. The newsletter continues to be an excellent source of information for technicians that covered a variety of topics including: program enforcement, reciprocity with other states, DMV roadside checks, and information regarding the new on-line website recertification inspector training and testing. The Program Manager was scheduled to distribute two newsletters during 2012, however, due to time restraints there was only one distributed. The Program Manager will distribute three newsletters to the AIRS throughout the State during 2013. (see Appendix "O" Annual Newsletter)

The network computer system and station computer displays, continue to be used to provide program updates for CIRT exam sessions, training seminars and technical bulletins to the AIRS. The program's website at www.riinspection.org was used during this reporting year to outreach to the general public.

During 2012, the DMV, DEM and the Program Manager worked together redesign and improve the Program Overview Section of the Rhode Island Emissions and Safety Testing Program website, to make it more user friendly for the general public.

The implementation of the convenient 24/7 on-line website re-certification training program has proved to be very beneficial for the technicians in order for them to attain their re-certification training on their two year anniversary of their last test, instead of the technicians having to wait for the Program Manager to schedule the bi-annually exam.

Appendix "A"

Systech Reporting Services/RI EPA Reports Data

Appendix "B"

Detailed Test Volume by Test Type, Model Year and Vehicle Type for:

- **Initial Vehicle Tests**
- **Failures of Initial Test and Percentages of Total Failures**
- **First Retests by Failure Rate**
- **Subsequent Retest by Failure Rate**
- **OBD (Non-Diesel) Comparison Chart**

Appendix "C"

Initial Test Volume by AIRS, Model Year and Vehicle Type (CD Attached)

Appendix "D"

Detailed Initial OBD MIL Codes by Model Year and Vehicle Type

- **MIL commanded on and no codes are stored**
- **Mil is not commanded on and codes are stored**
- **Mil commanded on and codes are stored**
- **Mil is not commanded on and no codes are stored**

Appendix "E"

Detailed Fuel Cap Test Results by Model Year and Vehicle Type

- **Initial Vehicle Tests**
- **Failures of Initial Test and Percentages of Total Failures**

Appendix "F"

Vehicles with No Known Final Outcome and Summary for:

- **Detailed Initial Failure Results by Model Year, Test Type and Vehicle Type**
- **Detailed Retest Pass Results by Model Year, Test Type and Vehicle Type**
- **Detailed Retest Subsequent Pass Results by Model Year, Test Type and Vehicle Type**

Vehicle Identification Number (VIN) List of Vehicles with No Known Outcome and with 3 Months Lookup Table for:

- **(VIN) Number of Vehicles Tested**
- **Last Test Date**
- **Vehicle Type**
- **Model Year**
- **Type of Fuel**
- **Last Test Type**
- **Last Test Count**
- **Later Pass Date**

Appendix "G"

Initially Failed Vehicles Receiving a Waiver by Model Year, Make and Model

Appendix "H"

Average Emission Reductions after Repairs by Model Year and Vehicle Type

Appendix "I"

Audit Types

- **Covert Vehicle Audits**
- **Covert Visual Audits**
- **Overt Station Visual Audits**
- **DMV Quality Assurance Performance Audits**
- **Gas Bench Audits**
- **Vehicle Mass Analysis System (VMAS) Audits**
- **Digital Auditing**

Appendix "J"

Rhode Island Motor Vehicle Inspection/Maintenance Program Regulation Division of Motor Vehicles Safety and Emissions Control Regulation No. 1

Appendix "K"

Vehicles Subject to Inspection

Appendix "L"

Sticker Summary

Appendix "M"

Notice and Demand Form

Appendix "N"

Registration Denial
Notice of Action Form

Appendix "O"

RI Emissions Safety Testing Newsletter